

AMENDMENTS TO THE SPECIFICATION

Please delete paragraph [0003] and replace with the following:

[0003] Microseismic data is continuously received from microseismic sensors fitted in producing fluid wells, such as hydrocarbon producing fluid wells. Triggering algorithms are an important aspect of microseismic monitoring in that they are the mechanism by which the microseismic signals are detected. Algorithms are required that can discriminate between background noise, that may vary with time, and microseismic signals, that may also vary between events. The algorithm algorithms runs run in real-time and so simplicity of computation is also an advantage.

Please delete paragraph [0004] and replace paragraph with the following:

[0004] Microseismic monitoring in producing fluid fields, for example oil fields, may require mean monitoring in the presence of high levels of electrical noise. One source of electrical noise comes from the use of electrical currents for cathodic protection, particularly of the items in a well borehole. The cathodic protection current is DC, which is typically derived from an AC mains supply by rectification. This leads to a DC current that contains frequency peaks typically at 50 Hz, 100 Hz., etc. This large, peaky current invariably finds its way into the electrical outputs of the sensors and can make finding microseismic signals difficult.

Please delete paragraph [0005] and replace with the following:

[0005] There are several types of well known existing seismic triggers. The simplest is just the detection of a signal level change. A more sophisticated trigger is to look for a level change that occurs across several separate stations within a pre-defined time window.²⁷ Another variation on this is to use a long term-/short term average to cause a trigger. This is just the short-term average of a rectified signal divided by the long-term average of the rectified signal. The ratio of long-term to short-term is typically around a factor of nine.

Please delete paragraph [0006] and replace with the following:

[0006] In the presence of the multi-frequency noise described above, neither of the trigger algorithms described in the previous section is effective. What is required is an accurate model of the noise that, although it is well ~~characterised~~characterized locally, does change over time.

Please delete paragraph [0009] and replace with the following:

[0009] The frequency f_{Hz} could be 50 Hz for example, or a harmonic of 50 Hz.